APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,569	01/02/2002	Philip Atkin	GJEL:0003	5846

7590 06/06/2006	**EXAMINER**
Michael G. Fletcher	AGGARWAL, YOGESH K
Fletcher, Yoder & Van Someren	

ART UNIT	PAPER NUMBER
2622	

Michael G. Fletcher
Fletcher, Yoder & Van Someren
P.O. Box 692289
Houston, TX 77269-2289

DATE MAILED: 06/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/038,569	ATKIN, PHILIP
	Examiner	Art Unit	
	Yogesh K. Aggarwal	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>01 June 2006</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3* is/are rejected.

7)☒ Claim(s) *2* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some *   c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
     Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Response to Arguments

1.   Applicant's arguments filed 03/31/2006 have been fully considered but they are not

persuasive.

Examiner's response:

2.   Applicant argues with regards to claim 1 that the term "linear" has been misconstrued to

mean spatially in a line which is inconsistent with the specification, wherein the term "linear" to

mean "directly proportional" as disclosed in Paragraph 4 of the specification. The Examiner

respectfully disagrees. MPEP 2111.01, Part II explains "If extrinsic reference sources, such as

dictionaries, evidence more than one definition for the term, the intrinsic record must be

consulted to identify which of the different possible definitions is most consistent with

applicant's use of the terms. *Brookhill-Wilk 1*, 334 F. 3d at 1300, 67 USPQ2d at 1137; see also

Renishaw PLC v. Marposs Societa ' per Azioni, 158 F.3d 1243, 1250, 48 USPQ2d 1117, 1122

(Fed. Cir. 1998) ("[W]ords in patent claims are given their ordinary meaning in the usage of the

field of the invention, unless the text of the patent makes clear that a word was used with a

special meaning."). *Compare MSM Investments Co. v. Carolwood Corp.*, 259 F.3d 1335, 1339-

40, 59 USPQ2d 1856, 1859-60 (Fed. Cir. 2001)".

In this case, the term "linear" representation of an image as used in the applicant's

specification e.g. in Paragraph 4 states "a series of images captured using different exposure

times will contain all of the available information. Indeed a technique well known in the art

involves simply averaging together a series of images recorded with steadily increasing

exposure times. **This can be shown to result in an image, which is approximately**

proportional to the logarithm of the intensity. Such a result may be pleasing to the eye in

that very bright regions do not suppress the detail of very dark regions, **but such images lack the crucial linear quality often required for quantitative analysis**". Therefore it is noted that according to specification the term "linear" representation of an image has not been explicitly defined so as to convey its meaning to one of ordinary skilled in the art.

Furthermore it is noted that if two variables x and y have a linear relationship as represented by a general linear equation y=mx+c, wherein 'm' is the slope of the line and 'c' is the y-intercept, y is directly proportional to x. Therefore, it is the Office's conclusion that when two variables have a linear relationship, they are also directly proportional to each other.

3.   Applicant argues that Morrison reference teaches adding pixels in a row and not adding corresponding pixels from multiple images. The Examiner disagrees. Mann reference discloses composite images formed from a series of input images wherein every pixel of the composite image is drawn from the corresponding pixel in each of the input source images according to a weighted average. The weighting is based on a certainty function associated with each source image pixel corresponding to an output pixel in the final composite image. The value of the relevant pixel parameter for a given final-image pixel (weighted average of n samples) is given by

$$\sum_n c_n P_n / \sum_n c_n$$

where c_n is the certainty function associated with the corresponding pixel of each source image n (col. 6 line 51-col. 7 line 8).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

5.   Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mann (US

Patent # 5,828,793) in view of Morrison et al. (US Patent # 5,033,096).

[Claim 1]

Mann discloses a method of creating an image with a still video camera (col. 11 lines 43-46,

figure 8, element 202). Mann further teaches that the image is transferred to a computer to be

stored on a main memory 210 represented as 212_1, 212_2, 213_3 etc. (col. 11 lines 46-54). Mann

also teaches that the composite images formed from a series of input images wherein every pixel

of the composite image is drawn from the corresponding pixel in each of the input source images

according to a weighted average. The weighting is based on a certainty function associated with

each source image pixel corresponding to an output pixel in the final composite image. The value

of the relevant pixel parameter for a given final-image pixel (weighted average of n samples) is

given by

$$\sum_n c_n P_n / \sum_n c_n$$

where c_n is the certainty function associated with the corresponding pixel of each source image n

(col. 6 line 51-col. 7 line 8). It is noted that P_n (pixel parameter) is dependent upon exposure

time, brightness or luminance and the gain of the system. Mann teaches that the resulting pixel

image represented by the expression above is saved in a target buffer 250 whose contents are

shown on screen display 234 (col. 12 lines 32-49). The features such as gamma correction (other

image data) are also stored in the target image data (col. 13 lines 4-8).

Mann fails to teach explicitly obtaining a substantially linear representation of the image.

However Morrison et al. teach a method of summing the amount of light (brightness levels) of

all the rows of pixels in order to generate a linear array of summation values in which the

summation values are allocated to positions of the sensor values in the CCD array (col. 7 line 57

– col. 8 line 18, figure 5) in order to cancel the totally random noise errors in the signals from

each element of the CCD by summing them so that the localized abnormalities do not have

substantial effect on the value.

Therefore taking the combined teachings of Mann and Morrison, it would be obvious to

one skilled in the art at the time of the invention to have been motivated to have obtained a

substantially linear representation of the image by summing them in order to cancel the totally

random noise errors in the signals from each element of the CCD by summing them so that the

localized abnormalities do not have substantial effect on the value as taught in Morrison (col. 3

lines 10-15).

[Claim 3/1]

Mann teaches that the different images are color so that the offset will be color dependent (col.

13 lines 21-30).

Allowable Subject Matter

6.   Claims 2 and 3/2 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art fails to teach or suggest a linear relationship is established between images recorded with different exposure times by the use of a perpendicular regression technique whereby each image is transformed to match the scale and offset of the first in the series and whereby the weighted average is calculated.

7.   Claim 3/2 is dependent upon claim 2.

Conclusion

8.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.
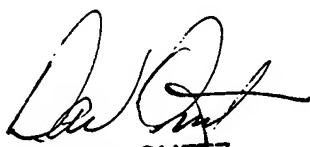
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K. Aggarwal whose telephone number is (571) 272-7360. The examiner can normally be reached on M-F 9:00AM-5:30PM.

9.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571)-272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10.   Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YKA
June 1, 2006

DAVID OMETZ
SUPERVISORY PATENT EXAMINER